2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 The Proposed Action

The proposed action is to formulate a comprehensive plan for managing TVA public land on Norris Reservoir. The proposed Norris Plan (Appendix A-1) is intended to provide a clear statement of how TVA would manage its land in the future, based on scientific, natural, and cultural resource management and economic principles. It addresses sensitive resources and other important issues and concerns raised by citizens and other stakeholders. The Norris Plan is intended to guide TVA resource management and property administration decisions for the next 10 years. It identifies the proposed range of uses for 315 parcels of TVA public land.

2.2 Alternatives

TVA is considering two alternatives for making land use decisions for the TVA public land around Norris Reservoir. Under the No Action Alternative (Alternative A), TVA would continue to use the existing Norris Reservoir land Forecast System to manage TVA public land. Under the Allocation Alternative (Alternative B), TVA would use the proposed Norris Plan to guide future land use decisions.

A common feature of both alternatives is categorization of the residential and flowage easement shoreline. In accordance with the TVA Shoreline Management Policy (SMP), TVA categorized the residential shoreline of Norris Reservoir based on resource data collected from field surveys of sensitive species and their potential habitats, archaeological resources, and wetlands along the residential shoreline of Norris Reservoir. The shoreline categorization is composed of three categories:

- **Shoreline Protection** is designed for shoreline segments that support sensitive ecological resources, such as federal-listed threatened or endangered species, high priority state-listed species, wetlands with high function and value, archaeological and/or historical sites of national significance, and certain navigation restriction zones. Within this category all significant resources would be protected.

- **Residential Mitigation** is intended for shoreline segments where resource conditions or certain navigation restrictions would require special analysis of individual development proposals, additional data, or specific mitigation measures.

- **Managed Residential** is depicted along shoreline segments where no sensitive resources are known to exist. An environmental review would be completed for any proposed action.

A resource inventory for threatened and endangered species, wetlands, and cultural resources was conducted, and the results were used to categorize the residential shoreline as shown in Table 2-1. The Residential Access (Zone 7) on Norris Reservoir comprises 130.8 miles or 16.2 percent of the total 809.2 shoreline miles. Another 133.2 miles (16.5 percent) of shoreline is land TVA does not own in fee, but has retained rights to flood (Non-TVA

Shoreland, Zone 1). Owners of this shoreland can apply to TVA for permission to construct water use facilities. Together, the mileage for Non-TVA Shoreland (Zone 1) and Residential Access (Zone 7) were included in the residential shoreline on Norris Reservoir. Approximately 5 percent of the residential shoreline has known archaeological resources or the potential for their occurrence; 24 percent has wetland vegetation; and 65 percent has the potential habitat to support sensitive plant and/or animal species. Depending on the vulnerability and sensitivity of archaeological, wetland, and rare plant and/or animal species resources, the shoreline reaches were placed in either the Shoreline Protection or Residential Mitigation categories. All other residential shoreline will be placed in the Managed Residential category. The result is that 5.0 miles (1.9 percent) of the total residential shoreline is in the Shoreline Protection category, 232.7 miles (88.1 percent) is in the Residential Mitigation category, and 26.3 miles (10.0 percent) is in the Managed Residential category.

TABLE 2-1 EXISTING RESIDENTIAL SHORELINE CATEGORIZATION

Category	Residential Shoreline		Total Reservoir Shoreline
	Miles	Percent	Percent
Shoreline Protection	5.04	1.9	0.62
Residential Mitigation	232.65	88.1	28.75
Managed Residential	26.27	10.0	3.25
Total	**263.96**	**100.0**	**32.62**

Docks and other residential shoreline development would not be permitted on land within the Shoreline Protection category because of the sensitive nature of the resources contained in these areas or because of navigation restrictions. Section 26a applications for docks and other residential shoreline development in the Residential Mitigation category would be reviewed by TVA for compliance with the SMP (TVA, 1998) and Section 26a regulations. Development restrictions or mitigation measures may be necessary in this shoreline category. Section 26a applications for docks and other shoreline development in the Managed Residential category would also be reviewed for compliance with the SMP and Section 26a regulations.

It is strongly emphasized that as new data is collected on the spatial location and significance of endangered species, wetlands, cultural resources, or navigation restrictions, adjustments to category boundaries may be necessary. Over time, some areas designated as Shoreline Protection or Residential Mitigation category could be moved into the Managed Residential category if new resource information warrants such a change. Similarly, some areas designated as Managed Residential category could be moved into the Shoreline Protection or Residential Mitigation categories if new information supports such a change. Property owners should check with the TVA CPWT for the current status of an area.

2.2.1 Alternative A—No Action Alternative

Under this alternative, TVA would continue to use the Forecast System to manage public land on Norris Reservoir. The Forecast System for Norris Reservoir was developed by TVA staff in August 1968, without the particular consideration for sensitive resource protection and public input provided by the National Environmental Policy Act (NEPA) decision-making process. It serves as a general guide for land use and/or development, and documents actual and prospective uses indicated for most of the TVA public land surrounding Norris Reservoir. When a proposal is received from an external applicant or an internal TVA organization, the proposed land use is evaluated for consistency with the Forecast System. The request is then either approved or denied, based on a review of potential environmental effects and other considerations.

Under Alternative A, the land which TVA has retained in fee ownership below the 1020-foot msc, not specifically considered in the Forecast System designations, would be managed consistent with outstanding landrights. The Forecast System does not identify where residential access could be permitted. However, the adoption of the SMP (see Section 1.2) has put in place a consistent approach to TVA permitting decisions about residential shoreline alterations. As such, the TVA public land acreage available for residential access is the same for both Alternatives A and B. The Forecast System designation categories are defined in Table 2-2. Acreage for each Forecast System designation is summarized in Table 2-3.

TABLE 2-2 FORECAST SYSTEM DESIGNATION DEFINITIONS

Forecast System Designation	Definition
Dam Reservation	*Land managed to protect the integrity of the dam and associated switchyards and power line.* – Most TVA dam reservations provide a visitor reception building that overlooks the facilities. Day use recreational activities, such as picnicking, fishing, hiking, and birdwatching, are encouraged. Campgrounds and boat launching facilities are often available. Hunting and unregulated camping are generally prohibited on the reservation.
Public Recreation	*Land set aside for use by the general public for recreational activities* – This includes informal, dispersed activities, such as hunting, hiking, fishing, and primitive camping, as well as more formal activities in developed areas, such as parks, boat launching areas, and campgrounds.
Reservoir Operations (*Islands)*	*Islands in the mainstream or tributaries used for informal, dispersed recreation and natural resource management projects.*
Reservoir Operations (*Mainland)*	*Generally, narrow bands of shoreland retained by TVA for flood control and other reservoir operations purposes* – Although there are no outstanding rights to construct water use facilities, TVA allowed backlying residential property owners to construct facilities on the land until 1992. Since 1992 facilities have only been allowed on reservoir operations land in those areas where existing facilities have been permitted.

TABLE 2-2 FORECAST SYSTEM DESIGNATION DEFINITIONS	
Forecast System Designation	**Definition**
Power Transmission and Power Needs	*Land reserved for future power development or to maintain the integrity of existing power lines* – Interim wildlife enhancement projects are often implemented on the land.
Commercial Recreation	*Land that TVA has reserved primarily for commercial use* – This use includes, but is not limited to, marinas and campgrounds. Informal, dispersed recreational activities often occur on this land as an interim use.
Minor Commercial Landings	*Tracts allocated for minor commercial landings available for public or private development of small-scale barge facilities* – These are sites that can be used for transferring pulpwood, sand, gravel, and other natural resource commodities between barges and trucks. Since this use is intermittent and usually not a major activity, there would generally be no significant impact on adjacent land uses.
Forestry Research	*Tracts used as ongoing sites for monitoring tree growth and stress* – Also, trees are used in these areas to produce reliable seed sources.
Steam Plant Study	*Tracts set aside to potentially serve as a future steam plant location.* – The actual construction of a steam plant would depend on energy demands and cost-benefit considerations.
TVA Small Wild Area	*These TVA natural areas are areas managed by TVA or in cooperation with other public agencies or private conservation organizations to protect exceptional natural or aesthetic qualities that can also support dispersed, low-impact types of outdoor recreation.*
Wildlife Management	*Land managed for the enhancement of natural resources for human use and appreciation. Management of resources is the primary focus of this designation* – Management strategies include planting food plots, selective timber harvesting, and other forms of manipulating habitat to attract certain wildlife species. Appropriate activities in this zone include hunting, wildlife observation, and camping on undeveloped sites.

TABLE 2-3 SUMMARY OF FORECAST SYSTEM DESIGNATIONS FOR NORRIS RESERVOIR	
Forecast System Name	**Acres**
Minor Commercial Landing	23.85
Commercial Recreation	97.32
Dam Reservation	903.74
Forestry Research	726.23
Power Transmission System	584.37
Public Recreation	18,029.59
Reservoir Operations - Island	1,221.58
Reservoir Operations - Mainland	1,346.09
Steam Plant Study	820.99
TVA Small Wild Area	363.31
Wildlife Management	175.19
No Forecast	3,634.51
Total	**27,926.77**

2.2.2 Alternative B—Allocation Alternative

Alternative B, the Allocation Alternative, was developed using information obtained from the public, other agencies, organizations, existing and newly collected field data on land conditions and resources, and technical knowledge of TVA staff. In determining proposed allocations for 315 parcels of TVA public land, TVA considered a wide range of possible land uses. Each parcel of land was reviewed to determine its physical capability and suitability for supporting possible uses as well as expressed public needs. Based on this information, the Norris Reservoir Planning Team (see Appendix B-2 for list of team members) allocated parcels to four of the seven planning zones. No additional land was allocated to Non-TVA Shoreland (Zone 1), Project Operations (Zone 2), or Residential Access (Zone 7). Should changing conditions warrant, TVA will consider future zone allocation changes for TVA public land with the appropriate level of environmental review, public involvement, and approval from the Board. Compatible public works/utilities projects proposed in any zone will not require an allocation change.

No proposals were made during the planning process to allocate TVA public land to Industrial/Commercial Development (Zone 5). In the past, TVA has accommodated requests for commercial or industrial uses on Norris Reservoir or projects to accommodate water access, water supply, or water treatment needs. In addition, TVA supports local communities in their efforts to improve the overall economic situations. If it is determined that public land on Norris Reservoir could enhance an overall community development concept which includes commercial use, TVA would consider requests for utility corridor easements or allocation changes to support the proposal. The standardized planned land use zones are

described in Table 2-4 on the following page. These definitions would apply to Norris Reservoir as appropriate. A description of the planning process is included in Appendix A-1, Introduction, Process.

TABLE 2-4 PLANNED LAND USE ZONE DEFINITIONS

Zone		Definition
1	**Non-TVA Shoreland** *(Flowage/ Retained Rights)*	Shoreland located above summer pool elevation that TVA does not own in fee or land never purchased by TVA. TVA is not allocating private or other non-TVA public land. This category is provided to assist in comprehensive evaluation of potential environmental impacts of TVA's allocation decision. Non-TVA shoreland includes: • ***Flowage easement land***—Privately or publicly owned land where TVA has purchased the right to flood and/or limit structures. Flowage easement land is generally purchased to a contour elevation. Since this land is subject to TVA's Section 26a permitting requirements, the SMP guidelines discussed in the definition of Residential Access (Zone 7) apply to the construction of water use facilities fronting flowage easement residential development. SMP guidelines addressing landbased structures and vegetation management do not apply. • ***Privately owned reservoir land***—This is land never purchased by TVA and may include, but is not limited to, residential, industrial, commercial, or agricultural land. This land is subject to TVA's Section 26a approvals for structures.
2	**Project Operations**	All TVA public land currently used for TVA operations and public works projects includes: • ***Land adjacent to established navigation operations***—Locks, lock operations and maintenance facilities, and the navigation work boat dock and bases. • ***Land used for TVA power projects operations***—Generation facilities, switchyards, and transmission facilities and rights-of-way. • ***Dam reservation land—***Areas used for developed and dispersed recreation, maintenance facilities, watershed team offices, research areas, and visitor centers. • ***Navigation safety harbors/landings—***Areas used for tying off commercial barge tows and recreational boats during adverse weather conditions or equipment malfunctions. • ***Navigation day-boards and beacons—***Areas with structures placed on the shoreline to facilitate navigation. • ***Public works projects***—Includes fire halls, public water intakes, public treatment plants, etc. (These projects are placed in this category as a matter of convenience and may not relate specifically to TVA projects.) • ***Land planned for any of the above uses in the future.***

TABLE 2-4 PLANNED LAND USE ZONE DEFINITIONS		
Zone		**Definition**
3	**Sensitive Resource Management**	Land managed for protection and enhancement of sensitive resources. Sensitive resources, as defined by TVA, include resources protected by state or federal laws or executive orders and other land features/natural resources TVA considers important to the area viewscape or natural environment. Recreational activities, such as hunting, wildlife observation, and camping on undeveloped sites, may occur in this zone, but the overriding focuses are protecting and enhancing the sensitive resource the site supports. Areas included are: • TVA-designated sites with potentially ***significant archaeological resources***. • TVA public land with ***sites/structures listed on or eligible for listing on the National Register of Historic Places***. • ***Wetlands***—Aquatic bed, emergent, forested, and scrub-shrub wetlands as defined by TVA. • ***TVA public land under easement, lease, or license to other agencies/individuals*** *for resource protection purposes*. • ***TVA public land fronting land owned by other agencies/individuals*** for resource protection purposes. • ***Habitat protection areas***—These TVA natural areas are areas managed to protect populations of species identified as threatened or endangered by the USFWS, state-listed species, and any unusual or exemplary biological communities/geological features. • ***Ecological study areas***—These TVA natural areas are designated as suitable for ecological research and environmental education by a recognized authority or agency. They typically contain plant or animal populations of scientific interest or are of interest to an educational institution that would utilize the area. • ***Small wild areas***—These TVA natural areas are areas managed by TVA or in cooperation with other public agencies or private conservation organizations to protect exceptional natural, scenic, or aesthetic qualities that can also support dispersed, low-impact types of outdoor recreation. • ***River corridor with sensitive resources—***A river corridor is a linear green space along both stream banks of selected tributaries entering a reservoir managed for light boat access at specific sites, riverside trails, and interpretive activities. These areas will be included in Sensitive Resource Management (Zone 3) when identified sensitive resources are present. • ***Significant scenic areas***—These are areas designated for visual protection because of their unique vistas or particularly scenic qualities.

TABLE 2-4 PLANNED LAND USE ZONE DEFINITIONS		
Zone		**Definition**
		• ***Champion tree site—*** Areas designated by TVA as sites that contain the largest known individual tree of its species in that state. The state forestry agency "Champion Tree Program" designates the tree, while TVA designates the area of the sites for those located on TVA public land. • ***Other sensitive ecological areas***—Examples of these areas include heron rookeries, uncommon plant and animal communities, and unique cave or karst formations. • ***Land planned for any of the above uses in the future.***
4	**Natural Resource Conservation**	Land managed for the enhancement of natural resources for human use and appreciation. Management of resources is the primary focus of this zone. Appropriate activities in this zone include hunting, timber management to promote forest health, wildlife observation, and camping on undeveloped sites. Areas included are: • ***TVA public land under easement, lease, or license*** to other agencies for wildlife or forest management purposes. • ***TVA public land fronting land owned by other agencies*** for wildlife or forest management purposes. • ***TVA public land*** managed for wildlife or forest management projects. • ***Informal recreation areas*** maintained for passive, dispersed recreation activities, such as hunting, hiking, birdwatching, photography, primitive camping, bank fishing, and picnicking. • ***Shoreline Conservation Areas***—Narrow riparian strips of vegetation between the water's edge and TVA's backlying property that are managed for wildlife, water quality, or visual qualities. • ***Wildlife Observation Areas***—Areas with unique concentrations of easily observable wildlife that are managed as designated public wildlife observation areas. • ***River corridor without sensitive resources present***—A river corridor is a linear green space along both stream banks of selected tributaries entering a reservoir managed for light boat access at specific sites, riverside trails, and interpretive activities. River corridors will be included in Natural Resource Conservation (Zone 4) unless sensitive resources are present (see Sensitive Resource Management, Zone 3).
5	**Industrial/ Commercial* Development**	Land managed for economic development, including business, commercial, light manufacturing, and general industrial uses. Areas included are: • ***TVA public land under easement, lease, or license to other agencies/individuals***. • ***TVA public land fronting land owned by other agencies/individuals***. • ***Sites planned for future use supporting sustainable development.***

TABLE 2-4 PLANNED LAND USE ZONE DEFINITIONS		
Zone		**Definition**
		Types of development that can occur on this land are: • Business parks—TVA waterfront land which would support business and light manufacturing activities. • Industrial access—Access to the waterfront by backlying property owners across TVA property for water intakes, wastewater discharge, or conveyance of commodities (i.e., pipelines, rail, or road). Barge terminals are associated with industrial access corridors. • Barge terminal sites—Public or private facilities used for the transfer, loading, and unloading of commodities between barges and trucks, trains, storage areas, or industrial plants. • Fleeting areas—Sites used by the towing industry to switch barges between tows or barge terminals which have both offshore and onshore facilities. • Minor commercial landing—A temporary or intermittent activity that takes place without permanent improvements to the property. These sites can be used for transferring pulpwood, sand, gravel, and other natural resource commodities between barges and trucks.
6	**Developed Recreation**	All reservoir land managed for concentrated, active recreation activities that require capital improvement and maintenance, including: • ***TVA public land under easement, lease, or license to other agencies/individuals*** for recreational purposes. • ***TVA public land fronting land owned by other agencies/individuals*** for recreational purposes. • ***TVA public land developed for recreational purposes,*** such as campgrounds and day use areas. • ***Land planned for any of the above uses in the future.*** Types of development that can occur on this land are: • ***Commercial recreation***, e.g., commercial marinas, resorts, campgrounds, and golf courses. • ***Public recreation***, e.g., local, state, and federal parks and recreation areas. • ***Greenways,*** e.g., linear parks located along natural features, such as lakes or ridges or along man-made features, including abandoned railways or utility rights-of-way which link people and resources together. • ***Water access sites***, e.g., boat ramps, courtesy piers, canoe access, fishing piers, vehicle parking areas, picnic areas, trails, toilet facilities, and information kiosks.

TABLE 2-4 PLANNED LAND USE ZONE DEFINITIONS		
Zone		**Definition**
7	**Residential Access**	TVA-owned land where Section 26a applications and other land use approvals for residential shoreline alterations are considered. Requests for residential shoreline alterations are considered on parcels identified in this zone where such use was previously considered and where the proposed use would not conflict with the interests of the general public. Under the Norris Plan, residential access would be divided into three categories based on the presence and potential impacts to sensitive ecological resources, such as threatened or endangered species, wetlands, and archaeological and historic sites. The categories are (1) Shoreline Protection where no residential alterations would be permitted; (2) Residential Shoreline Mitigation, where special analysis would be needed; and (3) Managed Residential Shoreline, where no known sensitive resources exist. Types of development/management that can be considered on this land are: • ***Residential water use facilities***, e.g., docks, piers, launching ramps/driveways, marine railways, boathouses, enclosed storage space, and potable/nonpotablewater intakes. • ***Residential access corridors***, e.g., pathways, wooden steps, walkways, or mulched paths which can include portable picnic tables and utility lines. • ***Shoreline stabilization***, e.g., bioengineering, riprap, and gabions, and retaining walls. • ***Shoreline vegetation management*** on TVA-owned residential access shoreland. • ***Conservation easements*** for protection of the shoreline. • ***Other activities***, e.g., fill, excavation, grading.

***Commercial recreation uses**, such as marinas and campgrounds, are included in Zone 6.*

A basic premise of reservoir land planning is that land currently committed to a specific use will be allocated to that current use unless there is an overriding need to change the use. Committed land includes transfers, leases, licenses, contracts, outstanding landrights, small wild areas, and areas with identified sensitive resources, TVA project land, such as the dam reservation or power lines, and TVA-developed recreation areas. Agricultural licenses would be excluded because they are considered to be an interim use of TVA public land. For planning purposes, a total of 6696.70 acres of Norris Reservoir is considered committed. Table 2-5 on the next page summarizes the allocation of committed land on Norris Reservoir.

TABLE 2-5 SUMMARY OF ALLOCATION OF COMMITTED LAND ON NORRIS RESERVOIR	
Land Use Zones	**Acres**
Zone 2 - Project Operations	934.50
Zone 3 - Sensitive Resource Management	467.19
Zone 4 - Natural Resource Conservation	2,147.02
Zone 6 - Developed Recreation	1,675.44
Zone 7 - Residential Access	1,472.55
Total	**6,696.70**

The balance of Norris Reservoir (21,230.1 acres) was considered "plannable land," that is, land that was not previously committed to a use. Field data and/or existing information were collected on all plannable land by technical specialists, such as archaeologists, historic architects, wetland specialists, visual specialists, and biologists to identify areas containing sensitive resources and recommend a future best use.

Technical specialists were asked to rate each parcel high, medium, or low by a given set of criteria and to rank the parcels high, medium, or low depending on customer needs. Customer needs were identified during the scoping process (see Appendix A-2) to help determine the most suitable use for the land. After the ranking exercise, the planning team and technical specialists met to allocate the plannable parcels to the seven planning zones. Using resource maps and all of the information collected during the planning process, including public input, the capability and suitability of each parcel were discussed. Allocation decisions were made by consensus.

The allocations were used to prepare the proposed Norris Plan (Appendix A-1). The proposed Norris Plan contains an explanation of the planning process and an overview of the history and development of Norris Reservoir. The acreage totals for each of the six zones is summarized in Table 2-6.

TABLE 2-6 SUMMARY OF PROPOSED LAND USE ALLOCATIONS FOR ALTERNATIVE B	
Proposed Land Allocations	**Acres**
2 - Project Operations	934.50
3 - Sensitive Resource Management	4,839.18
4 - Natural Resource Conservation	18,936.64
5 - Industrial/Commercial Development	0.00
6 - Developed Recreation	1,743.90
7 - Residential Access	1,472.55
Total	**27,926.77**

Appendix A-3 is the Parcel Information Matrix which identifies each parcel number, the proposed allocation zone, number of acres, reason for allocation, prior forecast designation, and map panel locator. The location of each parcel is shown on the Norris Plan map for Alternative B (located in map pocket as Exhibit 1).

2.3 Comparison of Alternatives

Table 2-7 shows the comparison of acres of the forecast designations and proposed zones. Alternative A would continue the use of the existing Forecast System. Selection of this alternative could result in some reduction in potential long-term benefits on Norris Reservoir. Alternative B would allocate land into categories that emphasize sensitive resource management and natural resource conservation. Selection of this alternative would be beneficial to public land and would protect current resource functions and values. Impacts of either alternative (summarized in Table 2-8) would be insignificant.

TABLE 2-7 COMPARISON OF ALLOCATIONS FOR ALTERNATIVES A AND B

Alternative A Forecast Designations	Alternative B Proposed Zones						Alt. A TOTAL ACRES
	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	
Dam Reservation	903.74						903.74
Reservoir Operations	19.65	379.60	1,977.16		145.93	45.33	2,567.67
Public Recreation	4.02	3,355.31	14,186.17		483.66	0.43	18,029.59
Commercial Recreation			97.32				97.32
TVA Small Wildlife Area		363.31					363.31
Minor Commercial Landing		1.74	22.11				23.85
Forestry Research	6.29	70.58	608.61		40.75		726.23
Steam Plant Study		396.20	424.79				820.99
Wildlife Management			175.19				175.19
Power Transmission		218.72	365.65				584.37
No Forecast	0.80	53.72	1,079.64		1,073.56	1,426.79	3,634.51
Alt B TOTAL ACRES	934.50	4,839.18	18,936.64	0	1,743.90	1,472.55	**27,926.77**

Alternative A acres are added horizontally with the total acres in the right-hand column.
Alternative B acres are added vertically with the total acres along the bottom row.

Alternative A did not forecast any of the many narrow shoreline strips that front land which TVA sold to private individuals or transferred to a state agency. In many cases when TVA

leased or transferred land, it retained a narrow band of property between the 1044- and 1020-foot contour elevation. The narrow strip that comprises the shoreline around the two state wildlife management areas (Chuck Swan and Cove Creek) and the three state parks (Cove Lake, Big Ridge, and Norris Dam) totals 1673.1 acres that were not accounted for in Alternative A, but are reflected in Alternative B. Table 2-7 accounts for the nonforecast acres by including them in the "no forecast" row. Under Alternative B, the 783.9 acres of shoreline fronting the wildlife management areas are placed in Natural Resource Conservation (Zone 4) because of the dominant use of the adjacent transferred land. Likewise, the 889.2 acres of shoreline property fronting the three state parks are placed in Developed Recreation (Zone 6) because of the dominant use of the adjacent transferred land. Another notable variance is that Alternative A does not account for residential access parcels. The actual acreage for each alternative would be the same for both alternatives.

Alternative B allocates 68.5 percent less acreage to Project Operations (Zone 2) than does Alternative A. This means that more land would be available in Alternative B for undeveloped public use, as compared to Alternative A. Natural and sensitive resource management receives considerably more emphasis under Alternative B. Conversely, Developed Recreation (Zone 6) is allotted considerably more acreage under Alternative A.

Selection of Alternative A could result in some reduction in potential long-term benefits on Norris Reservoir. The Forecast System emphasizes recreation and power plant development. A major change from the existing Forecast System land designations is the creation of Sensitive Resource Management (Zone 3); land containing sensitive resources, such as protected species, wetlands, archaeological, historical, and significant visual resources, are allocated to this zone in Alternative B. Under Alternative A, the resources identified for protection would be protected by individual environmental reviews of specific land use proposals. However, allocation of these resources to Sensitive Resource Management (Zone 3) in Alternative B allows the protection of the sensitive resource to be the overriding objective for the management of a particular parcel of land, as well as providing an additional tool to better manage the potential cumulative effects which might occur to a sensitive resource. The Norris Plan emphasizes resource management and sensitive resource protection. Under Alternative B, eleven new TVA habitat protection areas would be designated because of the presence of rare species or other sensitive resources. Also, the existing Monks Corner Small Wild Area will be expanded by 25 acres. Other potential TVA natural areas would be considered during the Resource Management Unit Planning process.

2.4 The Preferred Alternative

The Preferred Alternative is Alternative B (Appendix A-1). The proposed Norris Plan honors previous land use commitments and allocates uncommitted TVA public land into zones that allow for a balance of development and conservation. It addresses the stewardship of sensitive resources and other important issues and concerns raised by citizens and other stakeholders. Shoreland habitat is incorporated into planning decisions. Land allocation decisions also consider critical knowledge of watershed conditions and their potential effects on reservoir resources.

TABLE 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE

Section of EA	Resource Area	Alternative A	Alternative B
3.1	Visual Resources	Due to land subject to potential development, the cumulative effects could substantially reduce the scenic attractiveness of Norris Reservoir land over time, resulting in an adverse impact on the visual landscape character and aesthetic sense of place.	With implementation of this alternative, substantial preservation of the scenic qualities, aesthetic sense of place, and attractive visual character of Norris Reservoir could be expected. This alternative would have beneficial impacts to the aesthetic resources of Norris Reservoir.
3.2 Cultural Resources			
3.2.1	Archaeological Resources	There are a number of archaeological resources that are considered potentially eligible for listing in the National Register of Historic Places (NRHP). Approximately 73 percent of the recorded archaeological resources are located on land proposed for public recreation. The remaining 27 percent are located on the Norris Dam Reservation, reservoir operations, and steam plant study areas. Under this alternative, site-specific activities are reviewed for impact to archaeological resources. If archaeological investigations demonstrate the need for mitigation, an appropriate archaeological investigation will be necessary, and potentially impacted resources will be properly recorded and removed. The Forecast System does not provide for specific preservation of archaeological resources. However, TVA will comply with regulatory requirements of the National Historic Preservation Act (NHPA) and Archaeological Resources Protection Act (ARPA).	This alternative would incorporate the phased identification and evaluation procedure to effectively preserve historic properties. Early identification of the presence of cultural resources through allocating land into the zones avoids the likelihood of soil-disturbing activities in areas known to contain historic properties. This would, in turn, save time, reduce costs, and ensure more efficient compliance of Section 106 of the NHPA than under Alternative A. All soil-disturbing activities that occur on TVA parcels would be reviewed by a TVA archaeologist. TVA will take necessary steps to ensure compliance with regulatory requirements of the NHPA and the ARPA. Within this alternative, there are commitments to the management of archaeological resources within Sensitive Resource Management (Zone 3) and Natural Resource Conservation (Zone 4) and to effectively preserve resources within the other planned parcels.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE			
Section of EA	**Resource Area**	**Alternative A**	**Alternative B**
3.2.2	Historic Structures	Under this alternative, proposals for changes to any TVA parcel will be reviewed on a case-by-case basis to assess impacts to historic structures potentially eligible or eligible for listing on the NRHP within the Area of Potential Effect (APE). This will include structures both on or adjacent to all TVA parcels.	Under this alternative, specific TVA parcels are identified as potentially subject to development. Historic structures were identified in the APE of these specific parcels and marked on the maps. The proposed use for a TVA parcel will determine the impact on the historic structure. Impacts of the proposed use will be assessed as required under Section 106 review of the NHPA.
3.3 Threatened and Endangered Species			
3.3.1 - 1	Plants	Under this alternative, use of TVA public land on Norris Reservoir would continue to be based on the Forecast System. The Forecast System does not currently include any areas, other than TVA small wild areas, reserved primarily for protection of natural resources. There are 39 reported occurrences of state-listed plant species on the subject parcels. Under the Forecast System 35 of these occurrences are on land designated for public recreation, 3 are on a parcel designated for steam plant study, and 1 is on land designated for forestry research. If the Forecast System continues to be used, potential impacts to state-listed threatened and endangered plants would be assessed during site-specific reviews. Each proposed land use would be reviewed, and its anticipated impacts to existing vegetation, including rare plants, would be evaluated. Some Forecast System uses would likely be modified, based on the environmental review process. However, the review process would ensure that impacts to state-listed plants would be negligible. Under the Forecast System, no land is managed specifically for the protection and enhancement of the rare plant populations present.	This alternative would provide protective status for 16 parcels containing 39 state-listed plant occurrences. Under the Norris Plan 12 (75 percent) of these parcels are in Sensitive Resource Management (Zone 3), 3 parcels (20 percent) are in Natural Resource Conservation (Zone 4); and 1 parcel (5 percent) is in Developed Recreation (Zone 6). In Sensitive Resource Management (Zone 3) the overriding focuses are protecting and enhancing the sensitive resources the site supports (see Section 2.2.2). Parcels in Natural Resource Conservation (Zone 4) are managed for the enhancement of natural resources for human use and appreciation. If this alternative is implemented with the Norris Plan, 86 percent of the parcels containing listed plants would be allocated to Sensitive Resource Management (Zone 3) and 14 percent would be allocated to Natural Resource Conservation (Zone 4).

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE

Section of EA	Resource Area	Alternative A	Alternative B
3.3.1 - 2	Terrestrial Animals	Currently, decisions regarding the use of TVA public land surrounding Norris Reservoir are based upon the Forecast System. Effects to populations of rare terrestrial animals and sensitive ecological areas (caves and heron colonies) would be considered during TVA environmental reviews associated with specific projects; therefore, no significant impacts to threatened or endangered terrestrial animals are expected. Although this process would protect most populations of rare terrestrial animals and sensitive ecological areas along Norris Reservoir, TVA's ability to address cumulative impacts to these resources would be limited.	Using the land planning allocation process, land planning parcels that harbor populations of rare terrestrial animals or sensitive ecological areas would be designated for Sensitive Resource Management (Zone 3) or Natural Resource Conservation (Zone 4). This process would protect populations of federal- and state-listed species, significant rare species habitat, and sensitive ecological areas. In parcels designated for Natural Resource Conservation, habitat manipulation would be allowed to improve this habitat for wildlife. This alternative would benefit rare terrestrial animals, their habitat, and sensitive ecological areas by applying appropriate protective buffers around them. Ultimately, unit plans would be developed for TVA public land surrounding Norris Reservoir. These plans would specifically designate protective zones for populations of rare terrestrial animals, their habitat, and sensitive ecological areas, and specify wildlife management requirements and limitations for Norris Reservoir. For these stated reasons, this alternative is preferred over Alternative A.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE			
Section of EA	**Resource Area**	**Alternative A**	**Alternative B**
3.3.1 - 3	Aquatic Animals	Under this alternative, TVA actions would be unlikely to adversely affect the habitat of protected aquatic species. While four federal- and/or state-listed fishes could occur in portions of the Clinch and Powell Rivers upstream from the land included in the Forecast System, current environmental review practices would likely avoid or minimize any adverse impacts to these species.	Under this alternative, no parcels were identified specifically to protect habitats necessary for sensitive aquatic species. However, adoption of this alternative would lead to the protection of several large areas containing wetlands and sensitive terrestrial habitats. Many of these areas would act as riparian buffer zones and could have indirect but positive effects on aquatic habitat quality. The cumulative effects of these actions may help improve water quality and aquatic habitats downstream from these parcels, including areas where sensitive aquatic species may occur. Therefore, this alternative could afford these species and/or habitats greater protection than the current Forecast System.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE

Section of EA	Resource Area	Alternative A	Alternative B
3.4 Terrestrial Ecology and Significant Natural Areas			
3.4.1 - 1	Terrestrial Ecology	Approximately 69 percent of TVA public land on Norris Reservoir is under either the public recreation, small wild area, forest research, or wildlife management designations. Approximately 65 percent of this land is under the public recreation designation. This Forecast System designation allows a wide variety of potential uses and management options ranging from undeveloped to developed recreation. Changes in use patterns under the public recreation designation could create a corresponding change in vegetation and terrestrial ecology of the affected parcels. However, these types of impacts would be localized and insignificant on a regional or subregional basis. Overall, the cumulative impacts to terrestrial ecology under this alternative would be insignificant on TVA's forestland, open land, and riparian areas.	This alternative allocates 23,775.8 acres within the categories of Sensitive Resource Management (Zone 3) and Natural Resource Conservation (Zone 4). These two categories comprise approximately 85 percent of TVA public land on Norris Reservoir. The management of these parcels under this alternative would be guided by written unit management plans. These plans describe the type and intensity of wildlife and public use management that are anticipated over the long-term. These plans would be developed and reviewed with public input. There would be approximately seven such units ranging in size from 1500 to 4000 acres. Selection of Alternative B would have a beneficial effect on the terrestrial ecology on TVA public land because 85 percent of public land has been allocated to Sensitive Resource Management (Zone 3) and Natural Resource Conservation (Zone 4). These areas would be managed to enhance and protect natural resources.
3.4 1- 2	Significant Natural Areas	All existing natural areas will continue to be managed in a manner consistent with no significant impacts. However, under the Forecast System there are no new areas identified as natural area candidates.	Because this alternative has a specific zone for Sensitive Resource Management (Zone 3) and allows for establishing new TVA natural areas and expansion of an existing small wild area, this is the preferred alternative. Eleven parcels meet the criteria for designation as new TVA habitat protection areas because of the presence of plant species with Tennessee state status. This alternative would have no significant impacts on TVA natural areas land.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE			
Section of EA	**Resource Area**	**Alternative A**	**Alternative B**
3.5	Wetlands/Riparian Ecology	Wetland areas located on TVA public land surrounding Norris Reservoir are found in most of the Forecast System categories. Under this alternative, these areas would most likely remain unchanged, although some emergent wetlands may gradually mature to scrub-shrub wetlands, and aquatic beds will vary in size depending on yearly reservoir water levels. Even though the Forecast System may change on these areas, it would be subject to TVA NEPA review, and any action would be subject to Executive Order No. 11990 (Protection of Wetlands). Because of TVA's review process, selection of this alternative would have insignificant or no impacts on either of these resources.	Under this alternative, significant wetland areas (excluding Residential Access [Zone 7] areas) would be allocated to Sensitive Resource Management (Zone 3) or Natural Resource Conservation (Zone 4). Sensitive Resource Management (Zone 3) and Natural Resource Conservation (Zone 4) areas will be part of TVA's unit planning process. Selection of this alternative would provide a beneficial effect to wetland and riparian resources on TVA public land, and future permit reviews would ensure that any impacts to Residential Access (Zone 7) wetlands and riparian areas would be insignificant.
3.6	Recreation	A large portion of TVA's retained land is forecast for public and commercial recreation—18,147 acres and 65 acres, respectively. Under the Forecast System this land could be used indefinitely for informal recreation activities, such as primitive camping, bank fishing, and hunting. However, this same land is subject to requests for developed recreation activities by other public agencies and private individuals as they might interpret the recreation and tourism demand. Requests for recreation development would be subject to environmental review and avoidance and/or mitigation of wetlands, threatened and endangered species, cultural resources, floodplains, and other elements of concern.	Under this alternative, 1744 acres are proposed for Developed Recreation (Zone 6). No additional land is allocated in Developed Recreation (Zone 6) for new commercial recreation development, but some land was allocated for expansion of mooring rights at existing marinas, where the appropriate rights exist. This allocation would give certain marinas the ability to request additional harbor area. The effects of expanded boat mooring capacity at existing areas would be expected to be minor and regionally insignificant. Under this alternative, 16,403 fewer acres would be subject to developed recreation proposals than there were under Alternative A. This means TVA would be considering developed recreation opportunities on significantly fewer acres than it would under Alternative A. This decrease is, however, in alignment with public desires expressed during scoping.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE

Section of EA	Resource Area	Alternative A	Alternative B
3.7	Water Quality	Under this alternative, few parcels comprising small acreages of TVA property are designated specifically for protection of sensitive resources. Although protection of the natural reservoir shoreline may be undertaken as a secondary consideration on parcels designated for various uses, natural resource protection or conservation and the resulting impacts on reservoir water quality may not be a primary consideration when land use decisions are made.	This alternative would provide a better opportunity to protect water quality by identifying Sensitive Resource Management (Zone 3) or Natural Resource Conservation (Zone 4) as the designated use on some parcels now having more general designations. Any of the proposed uses of Sensitive Resource Management (Zone 3) or Natural Resource Conservation (Zone 4) land would allow for protection of water quality either due to less development or ensured use of management practices to minimize negative impacts. Allocation of other parcels for future developed recreation activities or other public access/use areas would allow TVA control over development to minimize adverse impacts.
3.8	Aquatic Ecology	Under this alternative, few parcels of TVA public land are designated specifically for protection of sensitive resources. Although protection of the natural reservoir shoreline may be undertaken as a secondary consideration on parcels of TVA public land designated for various uses, natural resource protection or conservation, and consequently, impacts to aquatic communities, may not be a primary consideration when land use decisions are made affecting those parcels. There could be more recreational and TVA operations development under this alternative. Consequently, more direct and indirect disturbance of aquatic habitat could occur. There could also be greater potential for sedimentation and nutrient runoff.	Adoption of this alternative would provide a better opportunity to protect or enhance aquatic habitats by identifying sensitive resource management or conservation as the designated use on some parcels now having general designations for other uses. Because aquatic habitat on Norris Reservoir can be considered only “fair” overall, impacts to aquatic habitats would be a major consideration in future decisions affecting TVA public land under either alternative. However, this alternative better defines suitable activities for each parcel of TVA public land, and would likely result in fewer impacts.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE			
Section of EA	**Resource Area**	**Alternative A**	**Alternative B**
3.9	Socioeconomic	The Forecast System would continue to be used. This system currently classifies no land for industrial use, except for some small tracts used for commercial landing purposes. Any proposals for industrial use of these properties would receive appropriate environmental review when specific proposals are presented for TVA approval.	Under this alternative, no land would be classified for industrial/commercial use. However, as with similar municipal requests, TVA would consider requests for the use of suitable land in Project Operations (Zone 2), Natural Resource Conservation (Zone 4), and Developed Recreation (Zone 6) to provide minimum width corridors for reservoir access for the purpose of siting water intakes or other utility support to industry on backlying private land. The compatibility of the request with approved land use allocation (e.g., zone) would be considered, and each proposal would be subjected to the appropriate level of environmental review. Over 1700 acres would be zoned for Developed Recreation (Zone 6). All of this could be available for development requiring capital expenditures and maintenance. Construction of facilities and use of the property for such purposes would have some positive impact on income and employment in the area. Much of the use, however, depending on the type of development, is likely to be by residents of the local area or adjoining counties, limiting the impact.
3.10	Navigation	There would be no significant impact on navigation aids used by recreational boaters.	There would be no significant impact on navigation aids used by recreational boaters.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE

Section of EA	Resource Area	Alternative A	Alternative B
3.11	Prime Farmland	With the exception of the parcels which are less than 10 acres, completion of Form AD 1006 would assist in evaluating the impacts of farmland conversion for all the remaining parcels. Because of the small amount of prime farmland in the project area, any of these developments would probably result in an impact rating score below 160 which requires that protection of farmland be considered.	Most of the land in the project area that is used for agriculture has been allocated for Sensitive Resource Management (Zone 3) and Natural Resource Conservation (Zone 4). There are only five parcels which are larger than 10 acres and have a significant percentage of the acreage in agriculture that are allocated for Developed Recreation (Zone 6) or Residential Access (Zone 7). The total agriculture land use in all these parcels is approximately 90 acres, and none contain prime farmland soils. The development of these parcels would have an insignificant impact on farmland.
3.12 Other Issues			
3.12.1	Floodplain	Under this alternative, the allocation, development, and/or management of properties would be made on a case-by-case basis, and evaluations would be done individually to ensure compliance with Executive Order No. 11988. Potential development would generally consist of water use facilities and other repetitive actions in the floodplain that could result in minor floodplain impacts.	Under this alternative, the potential adverse impacts to natural and beneficial floodplain values would be less than those under Alternative A, because a substantial portion of the available land would be allocated for resource management and conservation activities. Little development which could affect floodplain values would occur on Sensitive Resource Management (Zone 3) and Natural Resource Conservation (Zone 4) land. Under either alternative, impacts to floodplain values would be insignificant.

Table 2-8 COMPARISON OF POTENTIAL ENVIRONMENTAL EFFECTS BY ALTERNATIVE			
Section of EA	**Resource Area**	**Alternative A**	**Alternative B**
3.12.2	Noise	The Forecast System land designations within which development of specific, new noise sources might occur are the reservoir operations - mainland (approximately 1347 acres), commercial recreation (approximately 97 acres), and industrial and minor commercial landings (approximately 24 acres). Reservoir Operations land includes residential development; commercial recreation (e.g., marinas); and industrial and commercial landings. Industrial and commercial landings comprise a range of potential manufacturing and processing operations as well as barge-loading and servicing facilities. Noise from single-family residences usually comes from recreational activities (boating and personal watercraft), landscaping, and transportation sources. These are common noises currently found around Norris reservoir. The level of these noises depends on the density of residences in an area. Multifamily residences, such as condominiums would generate the same type of noises but at higher levels in the local area. Large developments of single or multifamily housing would have the second level of community noise evaluation.	The allocations of committed land in this alternative are not exactly similar to those described in Alternative A. However, the amount of residential development (approximately 1744 acres) will not vary between the two alternatives. There is no land allocated to the Industrial/Commercial Development (Zone 5) in this alternative.
3.12.3	Air Quality	Insignificant effects on air quality.	Insignificant effects on air quality.